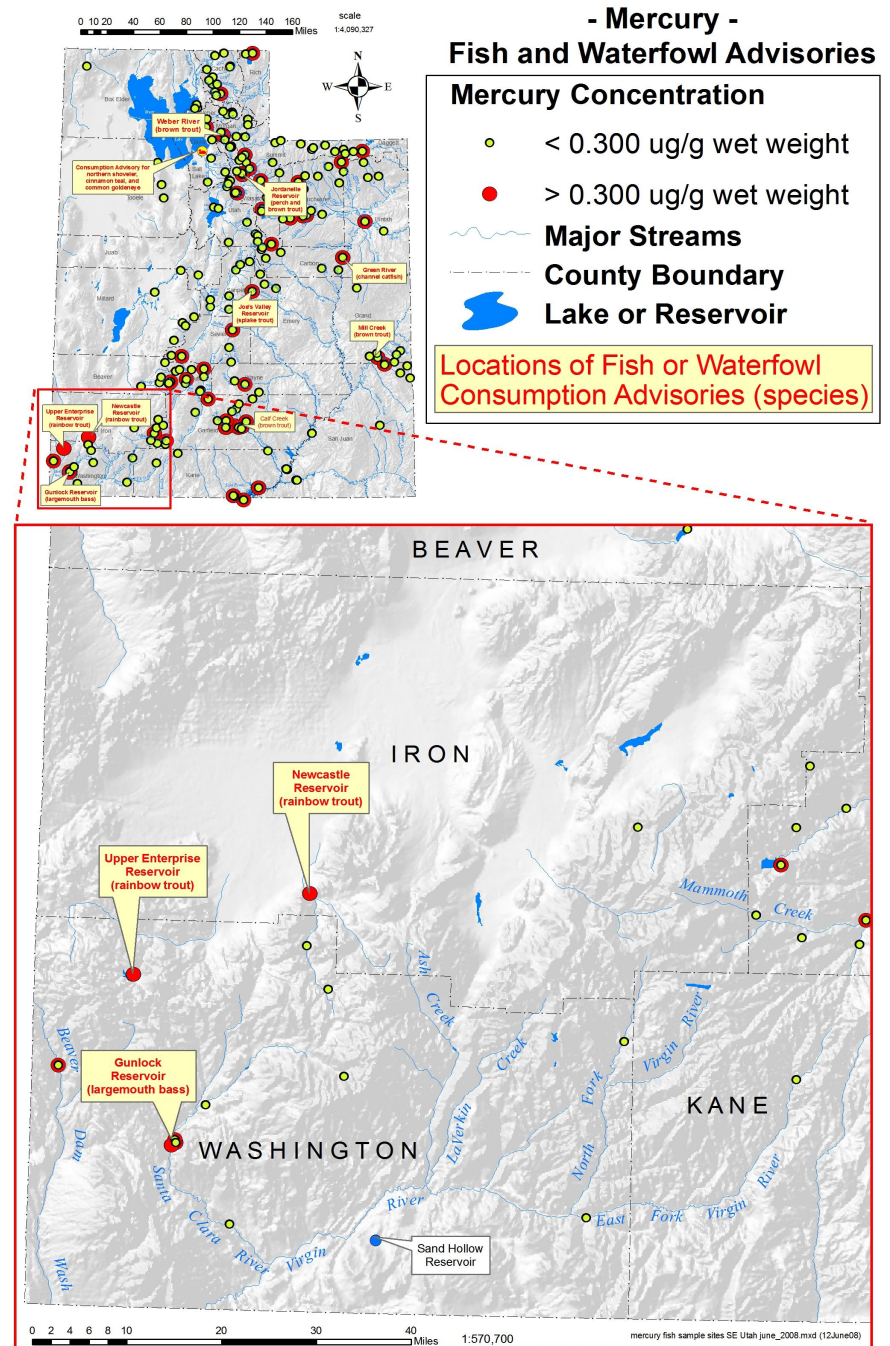


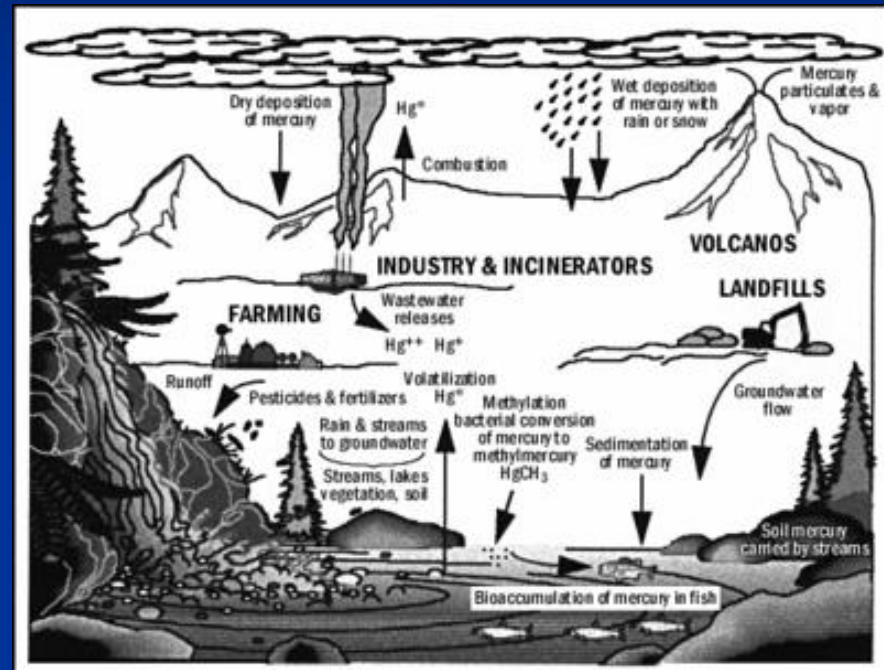
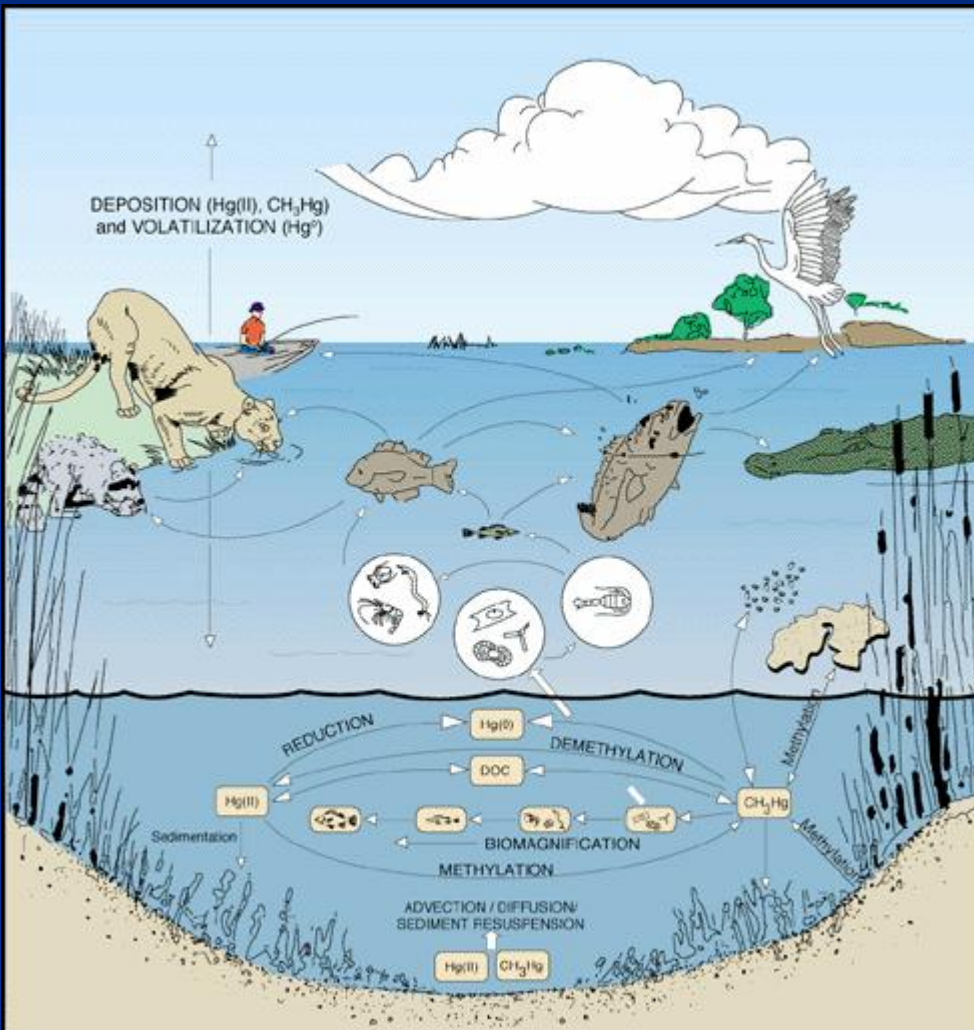
- Address the mercury problem directly
- Identify and reduce sources and factors that accelerate formation and cycling of methyl mercury
- From this first mercury project, other areas of the state can apply findings and approaches to address their mercury problems.



The Mercury (Hg) Cycle

Cycling of Mercury in the water

Sources of Mercury



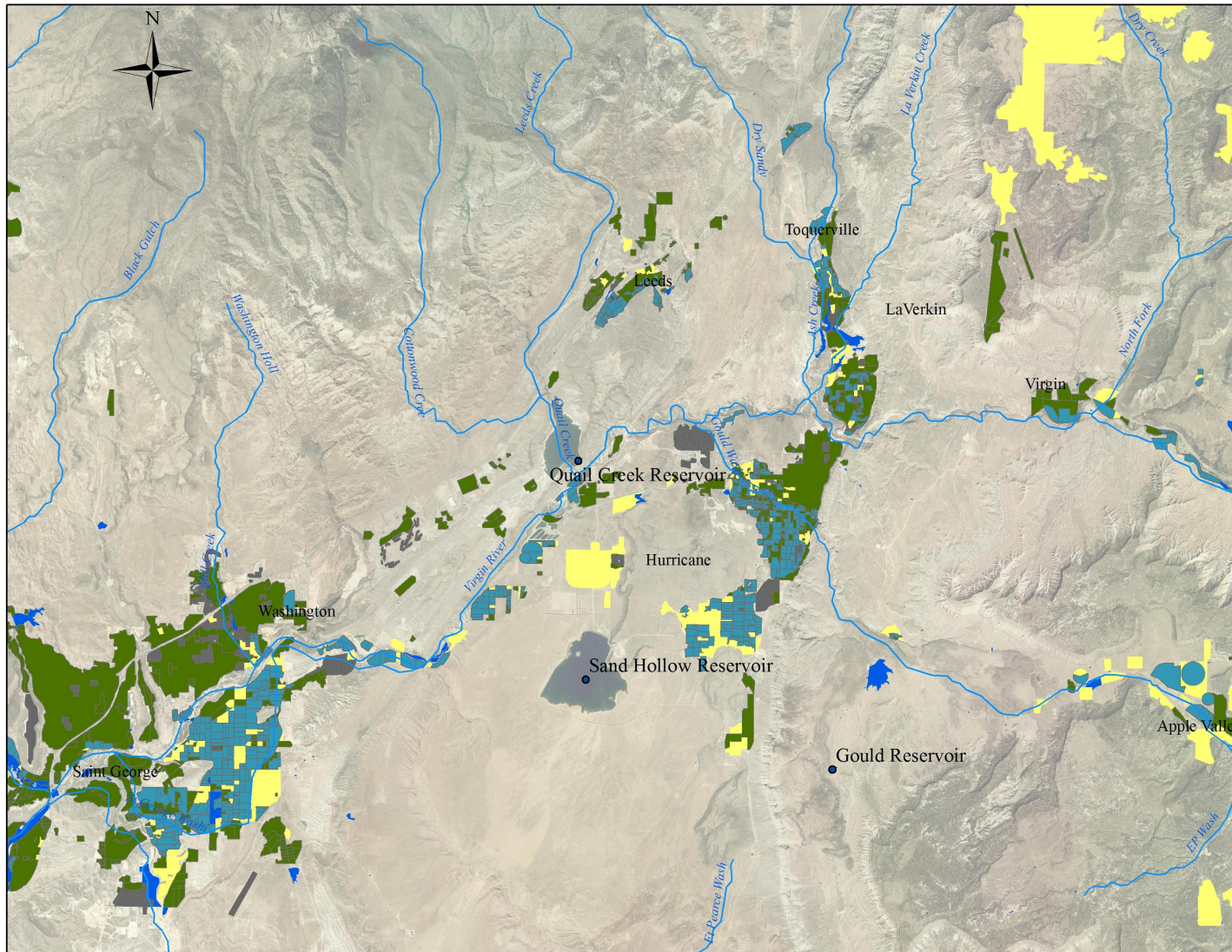
Mercury Hotspot – Southwestern Utah

EPA Screening Value = 0.3 ppm

Location	Year	Species	Mean Mercury concentration (ppm)
Newcastle Reservoir	2006	Rainbow Trout	0.48
Upper Enterprise Reservoir	2006	Rainbow Trout	0.65
Gunlock Reservoir	2005	Largemouth Bass	0.47
Sand Hollow Reservoir	2007	Largemouth Bass	0.41

Geographic location of the project:

■ Sand Hollow Reservoir and corresponding watershed



- Off channel reservoir
- Receives water from the Virgin River
- Built in 2002
- Surface Area = 1,300 ac
- Volume = 50,000 ac-ft

Sand Hollow Reservoir is....

- An important resource for Washington County, water through the proposed Lake Powell pipeline will be delivered to Sand Hollow.
- Only 5 years old suggesting rapid generation and uptake of methyl Hg. This signals a problem for fisheries.
- A simplified system. The only source of inflow is from the Virgin River with little inflow from the surrounding terrain.

Proposal and Researchers

- Sources of Hg
 - Area-wide natural and anthropogenic – Jodi Gardberg, DWQ and Dave Naftz, USGS
 - Air deposition – Tyler Cruikshank, DAQ
 - Loading (shoreline and watershed) – Dave Naftz, USGS and Bill Johnson, U of U
- Methylation of Hg
 - Hg in the water column and sediments - Dave Naftz, USGS and Bill Johnson, U of U
 - Hg methylation uptake rates and conditions – Dave Naftz, USGS and Bill Johnson, U of U
 - Sulfur Reducing Bacteria identification and gene analysis - Bart Weimer and Jacob Parnall, USU
- Hg in the foodchain
 - Species traits and identifiers – Clay Perschon, DWR
 - Fish tissue sampling – Clay Perschon, DWR
 - Macroinvertebrates – Theron Miller, DWQ
 - Diatoms - DWQ
- Laboratory Analysis – Bill Johnson, U of U